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NPIC/R-135/64

March 1964

PHOTOGRAPHIC INTERPRETATION REPORT

PROBABLE ANTIMISSILE-MISSILE LAUNCH COMPLEXES, LENINGRAD, USSR

CHANGES AND ADDITIONS

[redacted]

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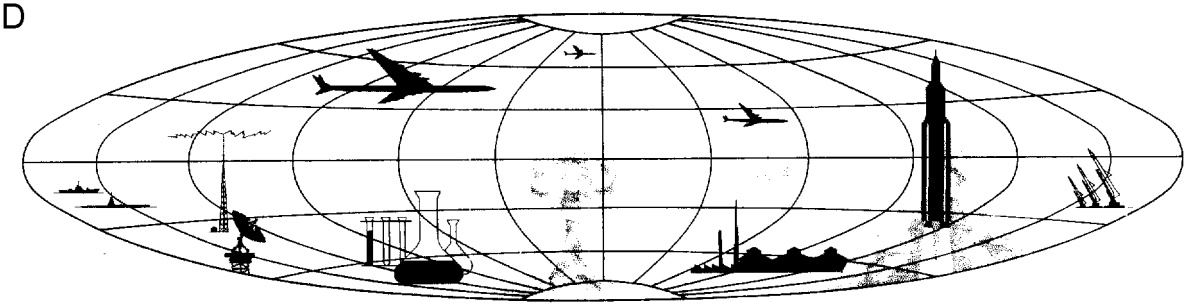

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PHOTOGRAPHIC INTERPRETATION REPORT

PROBABLE ANTIMISSILE-MISSILE LAUNCH COMPLEXES, LENINGRAD, USSR CHANGES AND ADDITIONS

25X1D [redacted]

NPIC/R-135/64
March 1964

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

TOP SECRET CHESS RUFF

Approved For Release 2001/03/03 : CIA-RDP78B04560A002100010077-1

PREFACE

This report has been prepared in response to requirements for an updating of that portion of NPIC report R-135/62 1/ pertaining to the probable AMM launch complexes deployed near Leningrad, USSR. Information contained in that report was based on analysis of KEYHOLE photographic coverage from [redacted]

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SUMMARY

25X1A The Northwest Probable AMM Launch Complex [redacted] is located at 60-27-00N 29-44-10E, 37 nautical miles (nm) northwest of Leningrad; the Northeast Complex [redacted] 25X1A at 60-05-20N 30-44-00E, 16 nm northeast of Leningrad; and the Southwest 25X1A Complex [redacted] at 59-43-00N 29-18-30E, 33 nm southwest of Leningrad (Figure 1).

These complexes have been observed on KEYHOLE photography from several missions 25X1D since [redacted] 25X1D is included in this report, as are line drawings to portray graphically the chronological development of each complex as 25X1D revealed by KEYHOLE photography from [redacted] 25X1D The drawings show, in black, those features observed to be 25X1D present as of [redacted] New details and changes are annotated in colors to denote the dates and missions on which they were first observed.

The quality of much of the recent photography of the Leningrad area has been very good. Definitive analysis and height mensuration of some of the facilities and features observed is limited, however, primarily by the scale of the photography.

Each complex consists essentially of three components: launch area, probable complex control center and associated electronic facilities, and support area.

The name of the component previously referred to as the "probable electronics facility" at each complex is changed in this report to "probable complex control center" with associated electronic facilities.

There are five launch sites at each complex, each consisting of six curved buildings of undetermined composition, regularly spaced along a perimeter road (Figure 2 and insert). A revetment extends from one end of most of the buildings toward the center of the launch site.

A light-toned surfaced area, probably a road, leads from the perimeter road and passes the opposite end of most of the curved buildings, extends toward the center of the site, then turns and follows alongside the revetment to the other end of the building. A triangular pattern extending from the buildings toward the site centers is dark in tone. This combination of features forms a pie-shaped or triangular position that equates generally to Launch Sites 5 and 6, Launch Complex A, at the Sary-Shagan Antimissile Test Center. This comparison plus similarities of the layout of electronic facilities at the Leningrad complexes and those at Electronic Site C, Launch Complex A, Sary-Shagan, were the basis for the hypothesis that the Sary-Shagan sites were prototypes for those subsequently deployed at Leningrad.

Significant developments observed on photography at the launch sites since [redacted] 25X1D include: road construction progress; appearance of lines of demarcation on the site perimeter roads perpendicular to each of the curved buildings; probable earth mounding of several of the site control buildings; and an unidentified structure at the center and along the outer

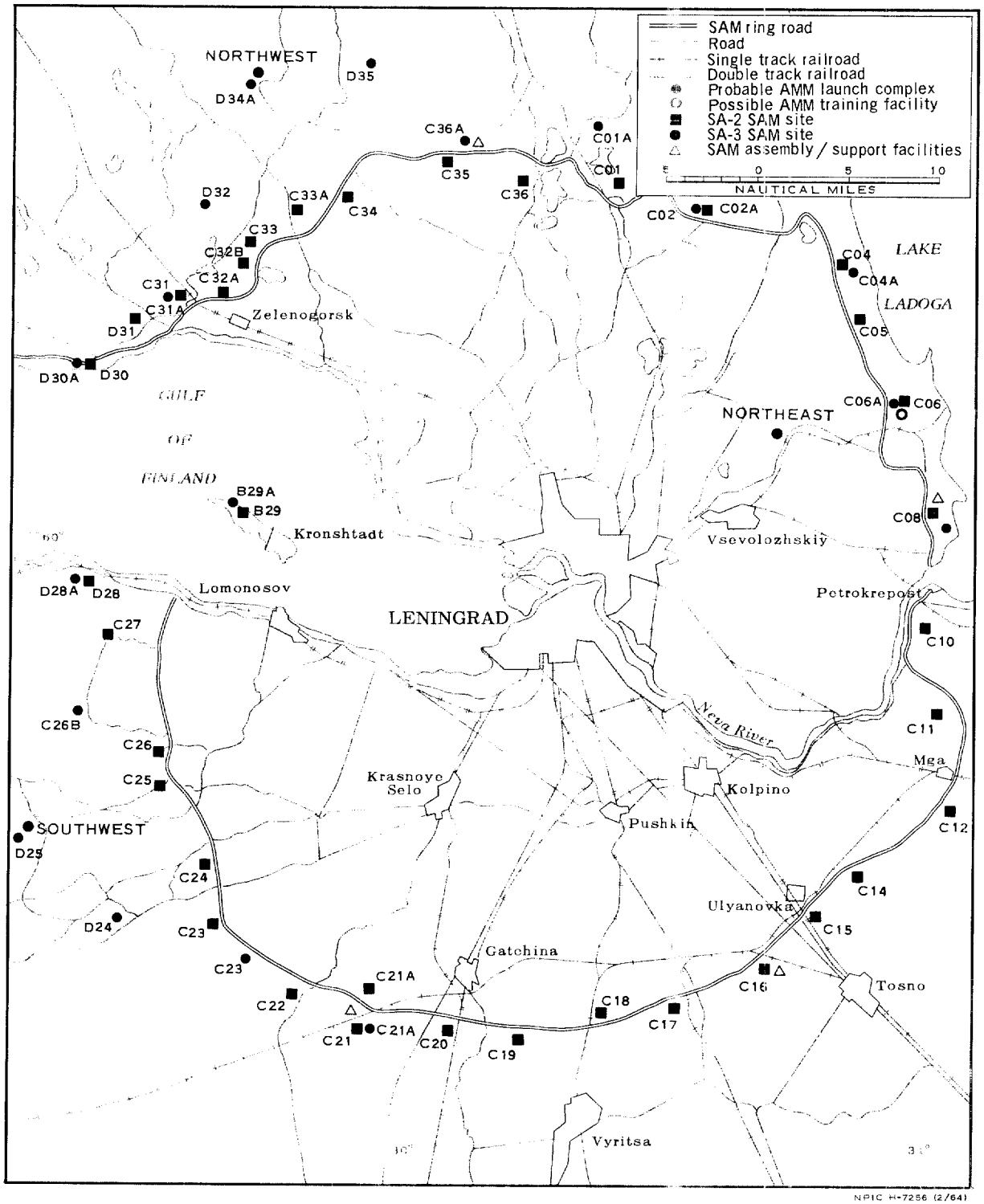

FIGURE 1. PROBABLE AMM LAUNCH COMPLEXES AND SAM INSTALLATIONS NEAR LENINGRAD, USSR.

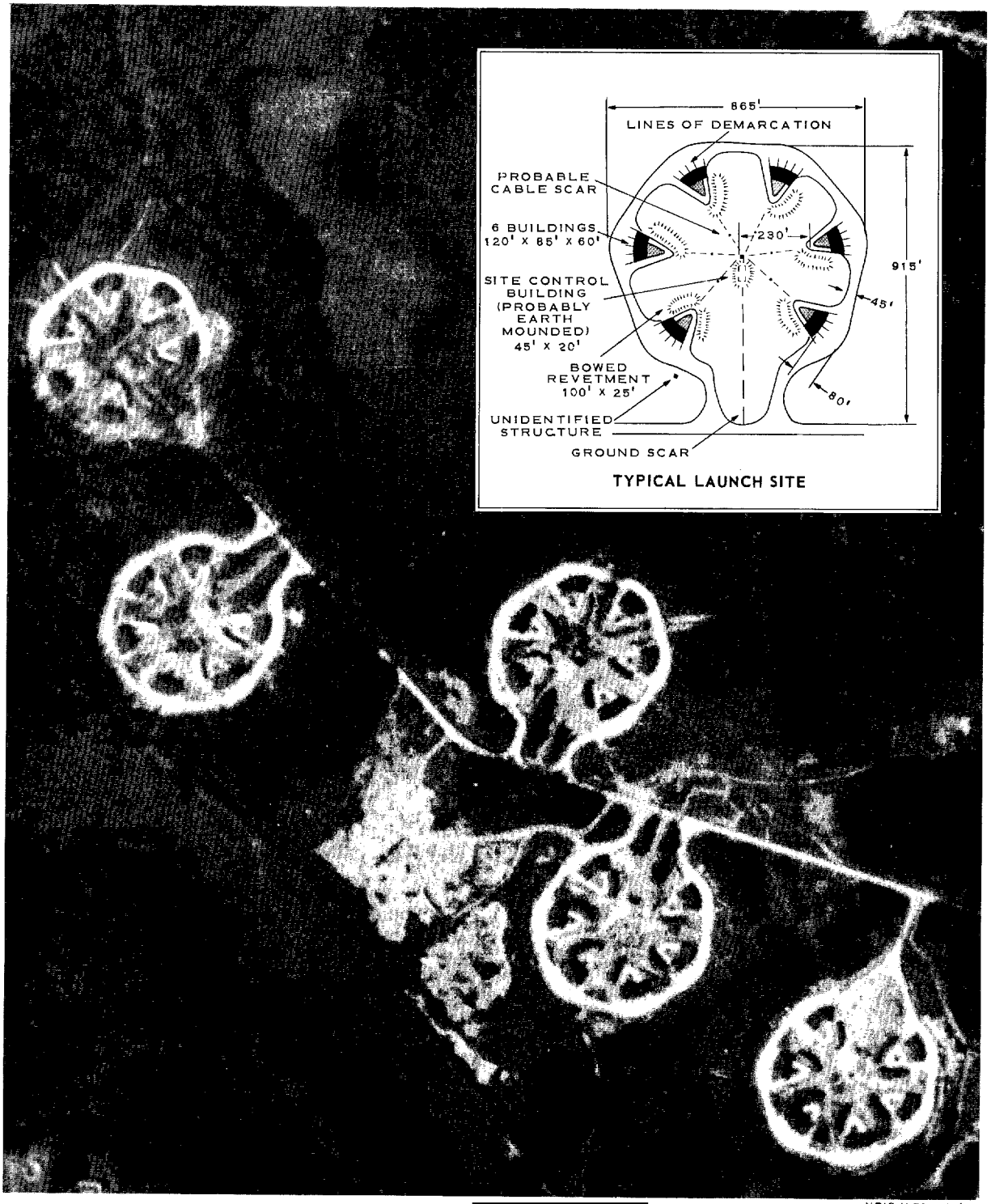

FIGURE 2. LAUNCH AREA, SOUTHWEST COMPLEX [redacted] *Insert Shows Typical Launch Site.*

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edge of the perimeter roads of some sites. Indications that cables extend from the center of the sites toward the revetted positions in front of the curved buildings are discernible at some of the sites.

The five lines of demarcation observed extending outwardly from the curved buildings appear to be separations between four entrances or bays, each measuring at least 30 feet in length by approximately 20 feet in width.

Roof configuration of the curved buildings cannot be determined; however, the possibility of a monitor or gable roof cannot be ruled out. A dark image observed midway and along the long axis of several of these buildings, when snow covered, may have been created by a shadow at the dividing line between two roof levels or by melted snow exposing the ridgeline of a gable roof.

Electronic facilities at the Northwest and Southwest Complexes are located at the extremities of a linear arrangement, with connecting probable cables or conduits extending to a centrally located probable complex control center. These electronic facilities, first observed as slender towers and later as small structures atop towers, now appear as large elevated structures approximately 150 feet in diameter, at least 70 to 80 feet high, with 30-foot-high tower-like structures extending from the top center. Photographic scale has been the limiting factor in trying to determine the exact nature of these structures and their associated equipment. They strongly resembled domes when observed on earlier small-scale photography with atmospheric haze hindering interpretation.

Stereoscopic study of KEYHOLE photography from the more recent missions has revealed the presence of additional features on top of the large structures. The possibility that these structures may be large parabolic dishes 2/ with centrally located feeds and supporting members cannot be negated on currently available photography. The pedestals or bases supporting the structures are not visible on vertical or near-vertical photography.

Outward appearances of the probable complex control centers at all three complexes indicate that construction probably is not completed. [redacted] 25X1B 25X1B Activity has been apparent at these locations in all three complexes since they were first observed.

No significant changes have been observed in the support areas of the three complexes.

A possible antimissile-missile training facility 3/ is collocated with previously reported Leningrad SAM Training Facility C06-2 [redacted] on the west shore of Lake Ladoga, 21 nm northeast of Leningrad. 25X1A KEYHOLE photography of [redacted] 25X1D revealed no apparent change 25X1D in the facility.

SAM assembly and support facilities located along the SAM ring road around Leningrad may provide service to the probable antimissile-missile launch complexes. A detailed report on these facilities is currently in preparation at NPIC, under report number NPIC/R-141/64.

A description of activity observed at each complex follows. The Southwest Complex is covered first since it has been observed more regularly on better photography.

SOUTHWEST COMPLEX

The Southwest Probable Antimissile-Missile Launch Complex (Figures 3 and 4) is served by a road constructed since [redacted] extending 8.5 nm outside the SAM ring road and terminating at the complex. Building areas located along the road approaching the complex include barracks, a power substation, and possibly a motor pool. A SAM assembly and support facility is located at 59-31-30N 29-55-10E along the SAM ring road, approximately 25 nm southeast of the Southwest Complex.

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The operational area is enclosed by a security fence and includes five launch sites (Figure 4), the Probable Complex Control Center with associated electronic facilities (Figure 5), and a support area.

An SA-3 SAM site is located just outside the complex to the southwest. The SAM site appears completed on [redacted] photography and was first observed under construction on photography of [redacted] Additional SA-3 SAM sites constructed during this time period also presumably are deployed for protection of the complex.

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The Southwest Complex was first identified on KEYHOLE photography of [redacted] Its progress through [redacted] was reported in NPIC/R-135/62. 1/ Subsequent to [redacted] the most substantial progress at the five launch sites appears to have occurred between [redacted] as indicated on the line drawing (Figure 4). Lines of demarcation on the perimeter roads opposite some of the curved buildings were barely discernible at the Southwest Complex on KEYHOLE photography of [redacted] Unidentified structures positioned at the center of some of the launch sites behind the site control buildings were observed on photography of [redacted] with snow conditions prevailing. Trackage in the snow was noted leading to one of the site control buildings and then looping across to the site perimeter road. Trackage also was observed throughout the support area.

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Two of the site control buildings appeared covered, probably earth mounded, when observed on photography of [redacted] Probable cable lines extending from the structures at the site centers toward some of the launch positions were observed at this time.

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Additional lines of demarcation and probable earth mounding of additional site control buildings become apparent on photography of [redacted]

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The Probable Complex Control Center and associated electronic facilities are located northeast of the launch sites and are served by a good road leading from the east-west service road. These facilities are arranged in a linear pattern with its long axis extending west-northwest/east-southeast. Electronic facilities are located at each extremity with connecting probable cables or conduits leading to the centrally located Probable Complex Control Center. Utility lines lead to this area from the vicinity of the Support Area. A tower-mounted unidentified antenna is situated on a mound approximately 450 feet northeast to the rear of the Center. A building is located near the southwest corner of the Center.

The electronic facility at the east-southeast extremity, when observed on photography of [redacted] appeared as a crescent-shaped structure probably atop a previously observed slender tower. The facility at the west-northwest extremity appeared as a tower at that time. The formerly crescent-shaped structure resembled a dome with a dark object on its top on photography of [redacted] The tower at the northwest extremity supported a structure

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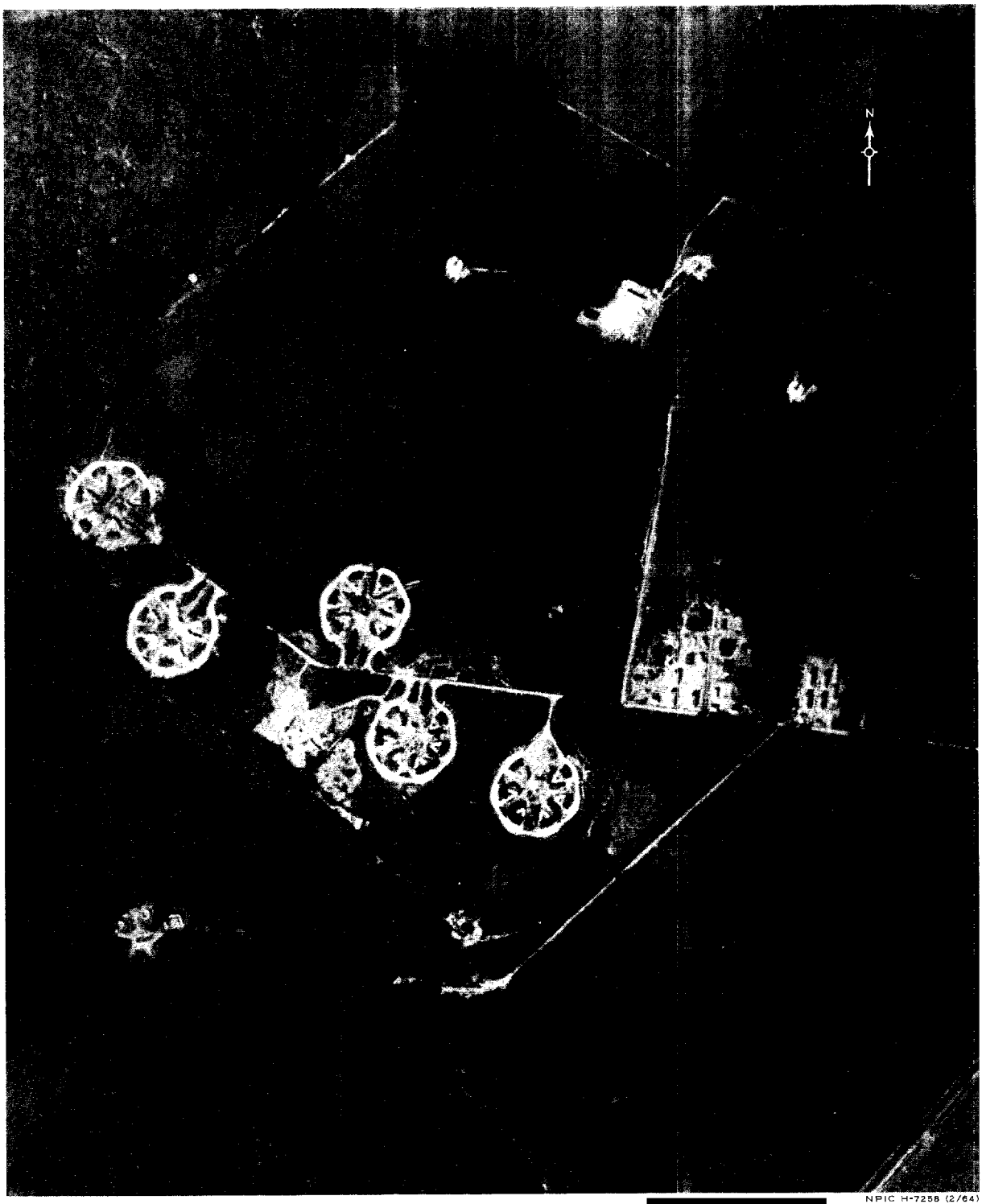

FIGURE 3. SOUTHWEST PROBABLE AMM LAUNCH COMPLEX, [redacted]

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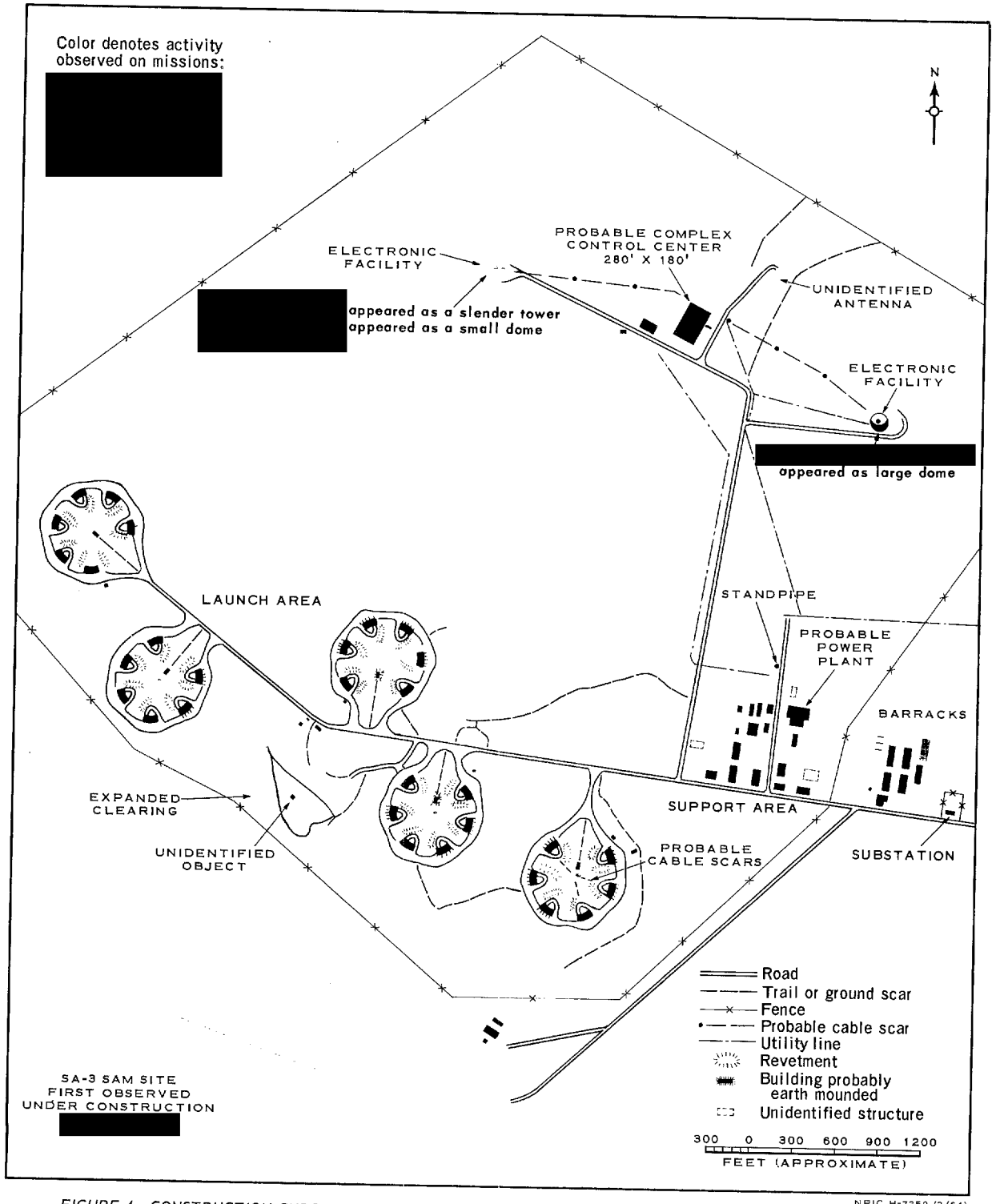

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FIGURE 4. CONSTRUCTION CHRONOLOGY AS OBSERVED AT SOUTHWEST PROBABLE AMM LAUNCH COMPLEX.

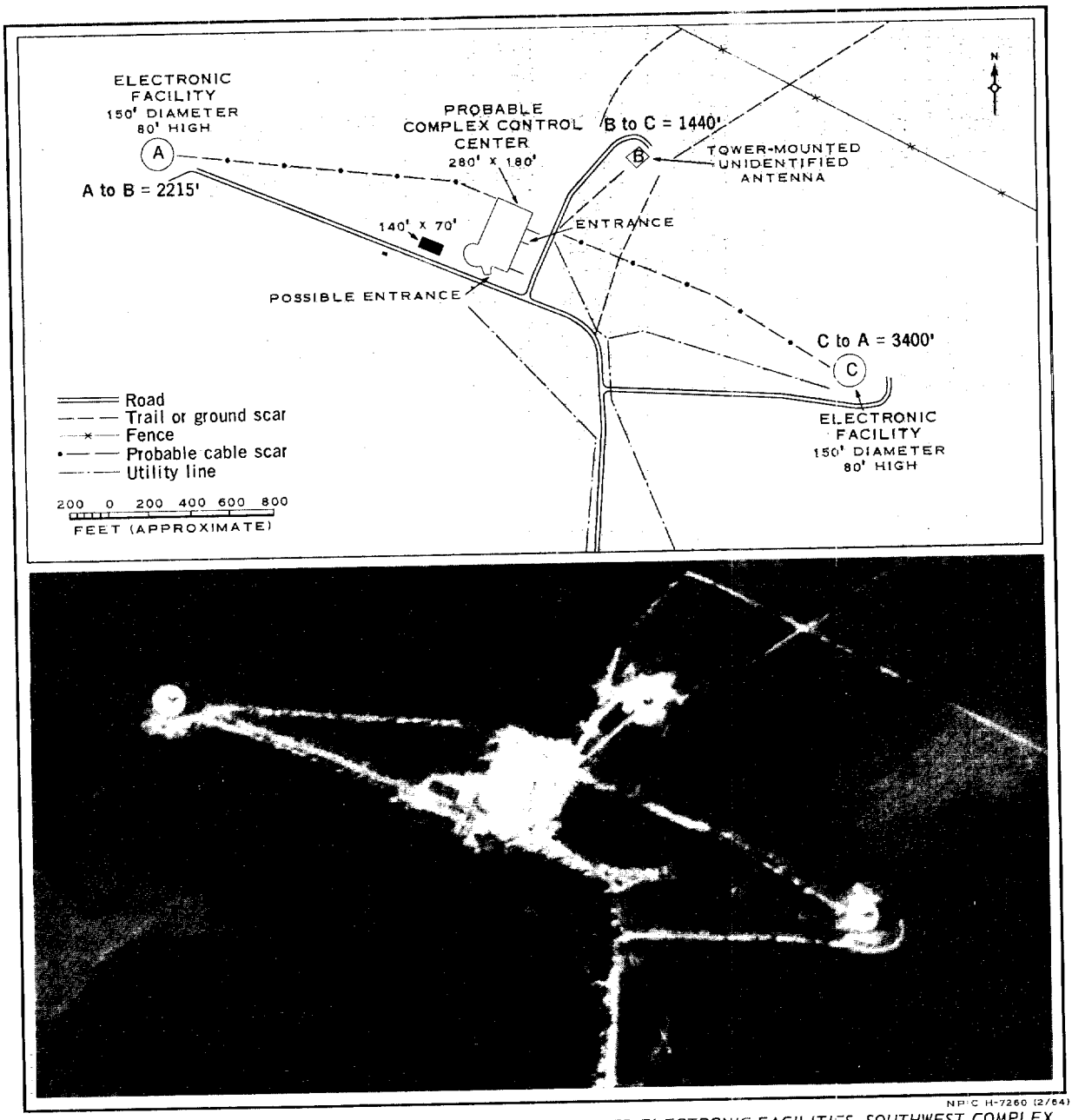

FIGURE 5. PROBABLE COMPLEX CONTROL CENTER AND ASSOCIATED ELECTRONIC FACILITIES, SOUTHWEST COMPLEX.

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resembling a small dome when observed on indistinct photography of [redacted]. The tower was barely discernible at that time and, although its configuration could not be determined, it appeared to be a slender structure. Nonstereoscopic photography of [redacted] revealed that the structures at each extremity were alike, each measuring approximately 150 feet in diameter and elevated approximately 80 feet above the ground. Additional tower-

like structures were observed extending approximately 30 feet upward from the top center of the larger structures. No significant change has been noted in these facilities on subsequent good-quality stereoscopic photography.

The Probable Complex Control Center measures approximately 280 by 180 feet. Progress of its construction appears to be more advanced than at the other complexes. There appear to be entrances on the east and south sides of the building. Unidentified protuberances are observed extending from the south end and east side of the structure on photography of recent missions.

No significant change has been noted in the Support Area since first observed. One new large barracks-type building was observed in the barracks area outside the complex entrance on photography of [redacted] 25X1D

NORTHWEST COMPLEX

The Northwest Probable Antimissile-Missile Launch Complex (Figures 6 and 7) is approximately 10 nm outside the SAM ring road. A SAM assembly and support facility is located at 60-23-20N 30-11-10E, along the SAM ring road, approximately 15 nm southeast of the Northwest Complex.

Building areas along the road approaching the complex include barracks, a power substation, and a possible motor pool.

The complex operational area is enclosed by a security fence with probable guard towers. Facilities within the operational area of the complex include a launch area; a Probable Complex Control Center and associated electronic facilities (Figure 8); a support area, and an SA-3 SAM site.

The chronological development of the Northwest Complex (Figure 7) appears to have been generally concurrent with development of the Southwest Complex. The Northwest Complex was first identified on KEYHOLE photography 25X1D of [redacted] Its progress through 25X1D [redacted] was reported in NPIC/R-135/62. 1/ Subsequent to 25X1D [redacted] there were several missions of KEYHOLE photography when cloud cover prevented observation of the Northwest Complex. Exceptions were 25X1D [redacted] 25X1D when no significant details were discernible due to haze and poor image quality, and [redacted] 25X1D when the structure at the northern electronic facility location resembled a large dome. A tower-like structure was observed there in [redacted] 25X1D Further interpretation of that photography was limited because of heavy haze and semidarkness.

The next useful KEYHOLE photography of the Northwest Complex was provided by [redacted] 25X1D Roads at the launch sites were snow covered. Roads were cleared in the Support Area and leading to an SA-3 SAM site under construction in the north-central portion of the complex. The electronic facilities now each appeared as elevated structures 150 feet in diameter with tower-like structures extending upward from the center.

Only a portion of the launch area was visible on photography of [redacted] 25X1D because of scattered to heavy clouds.

Interpretation of photography of Mission [redacted] 25X1D was limited because of small scale and haze; therefore, larger scale photography from [redacted] 25X1D was used to add new details to the line drawing.

The Probable Complex Control Center measured 160 by 160 feet in [redacted] 25X1D and on [redacted] 25X1D photography measures

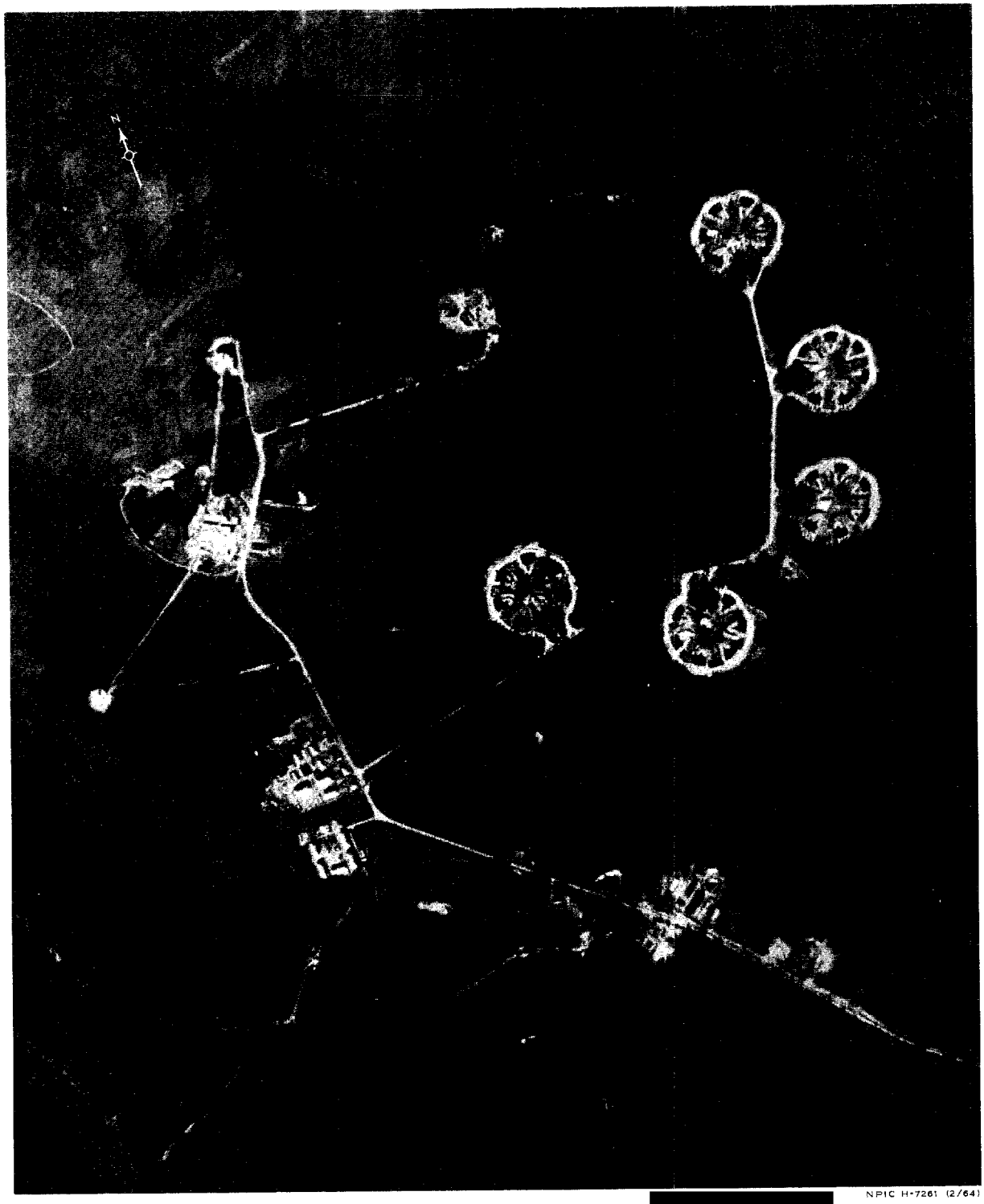

FIGURE 6. NORTHWEST PROBABLE AMM LAUNCH COMPLEX, [redacted]

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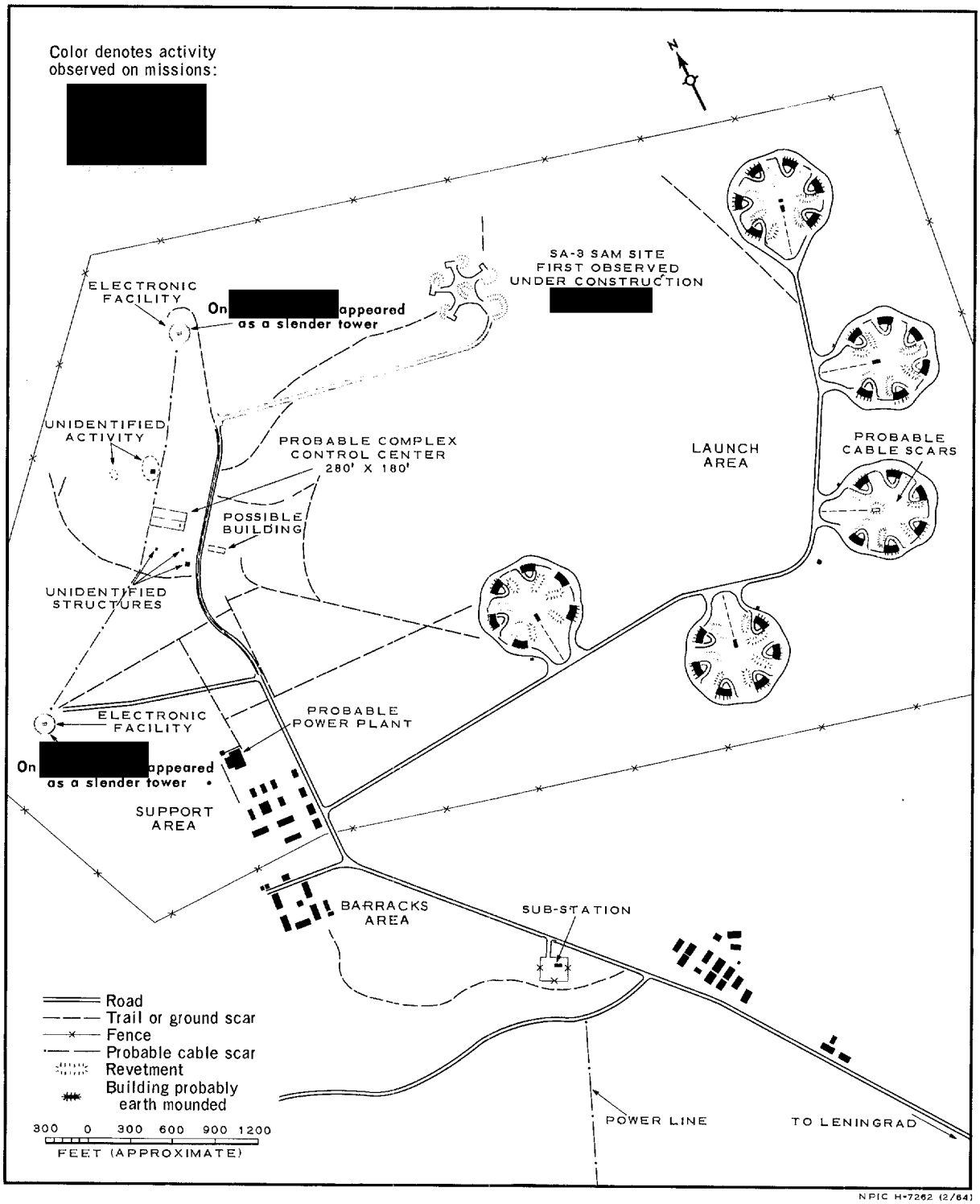

FIGURE 7. CONSTRUCTION CHRONOLOGY AS OBSERVED AT NORTHWEST PROBABLE AMM LAUNCH COMPLEX.

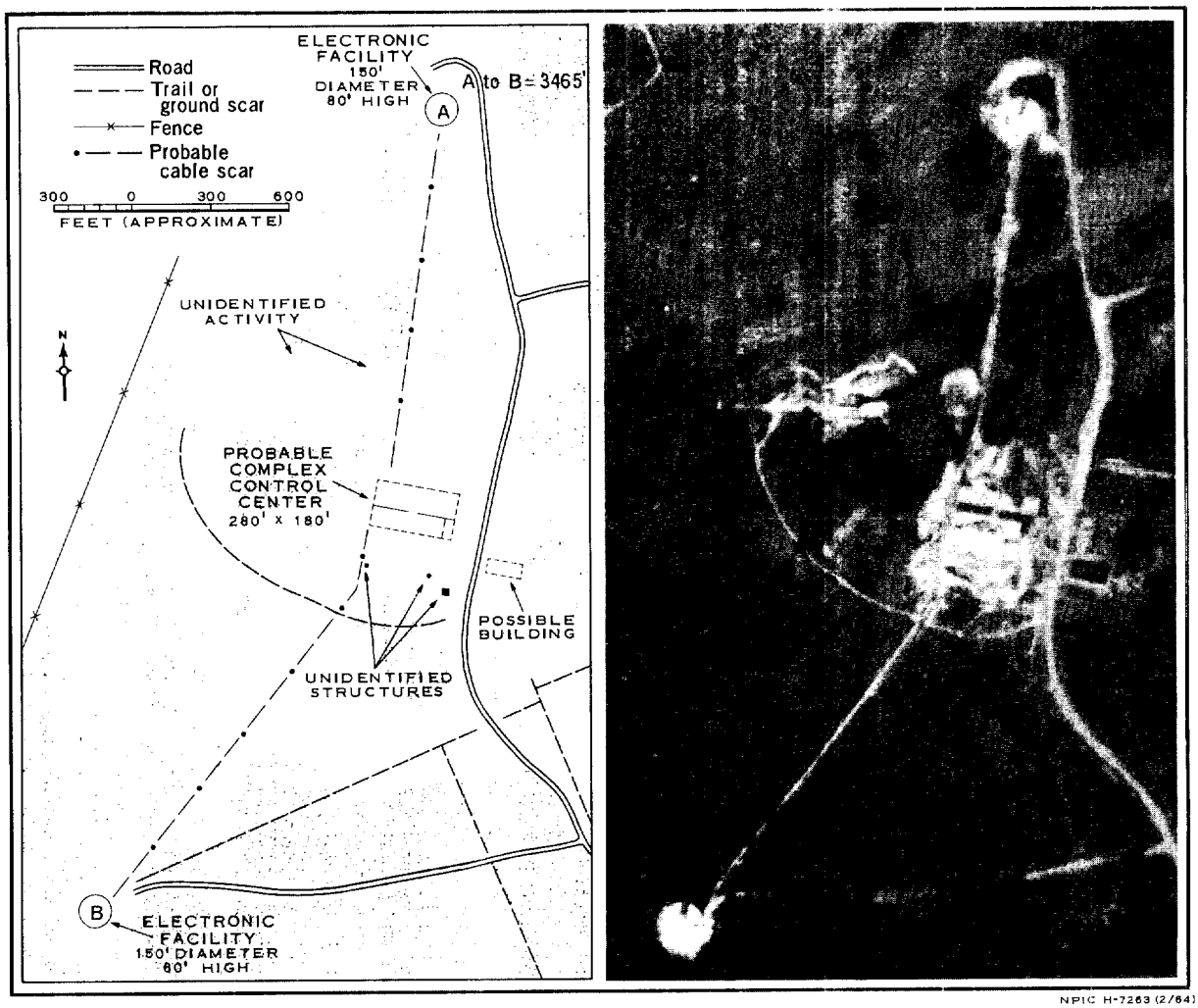

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FIGURE 8. PROBABLE COMPLEX CONTROL CENTER AND ASSOCIATED ELECTRONIC FACILITIES, NORTHWEST COMPLEX.

approximately 280 by 180 feet. Details of the building status cannot be determined. The southern half of the structure along its long axis appears to be at a higher level.

NORTHEAST COMPLEX

The Northeast Probable Antimissile-Missile Complex (Figures 9 and 10) is located approximately 7 nm inside the SAM ring road, and is situated adjacent to and northeast of Leningrad/Uglovo Airfield. A SAM assembly and support facility at 60-03-00N 31-02-30E, is located along the SAM ring road approximately 10 nm east-southeast of the Northeast Complex.

This complex was first identified on KEYHOLE photography of [redacted] Its progress through [redacted] was reported in NPIC/R-135/62. 1/

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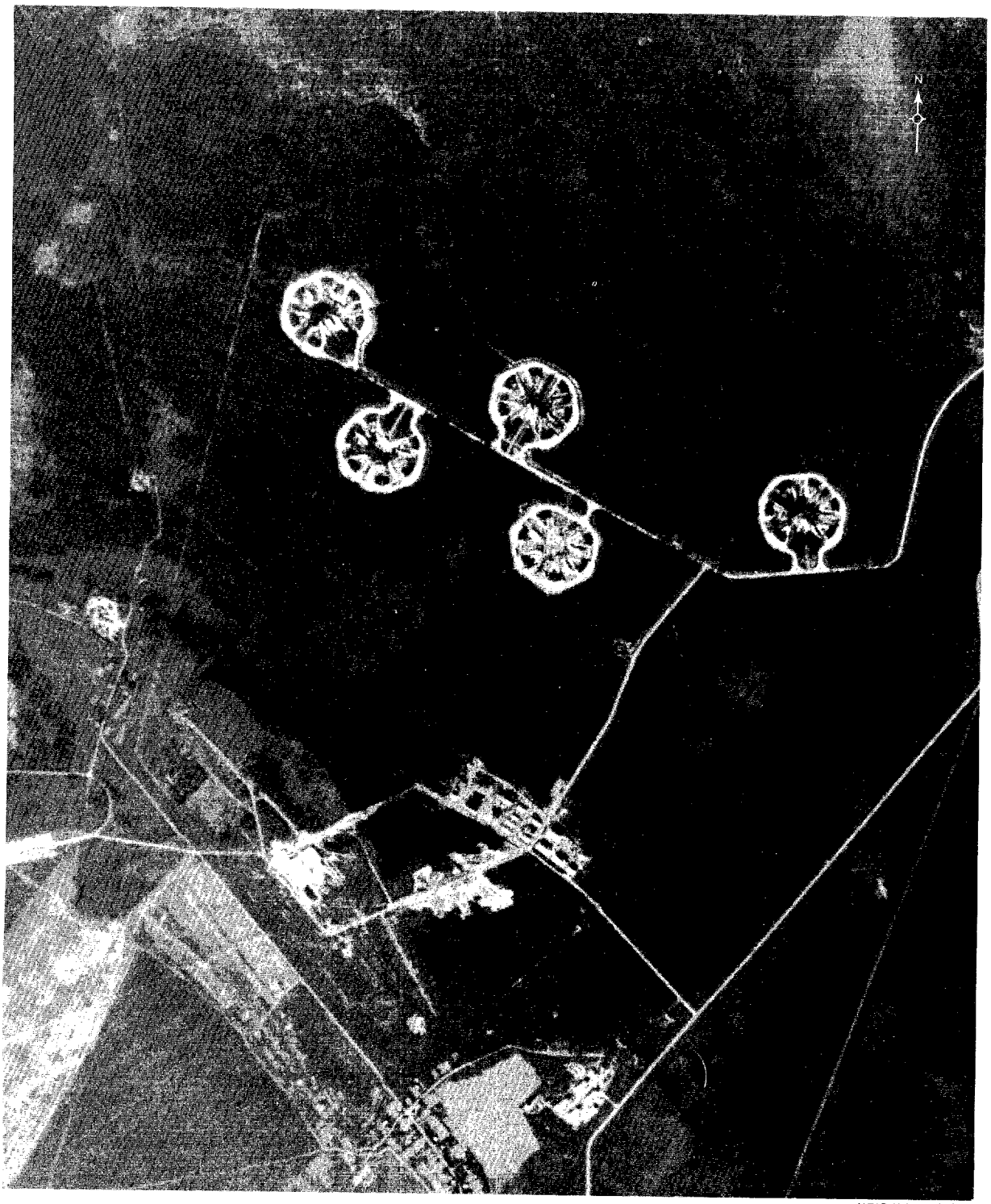

FIGURE 9. NORTHEAST PROBABLE AMM LAUNCH COMPLEX, [redacted]

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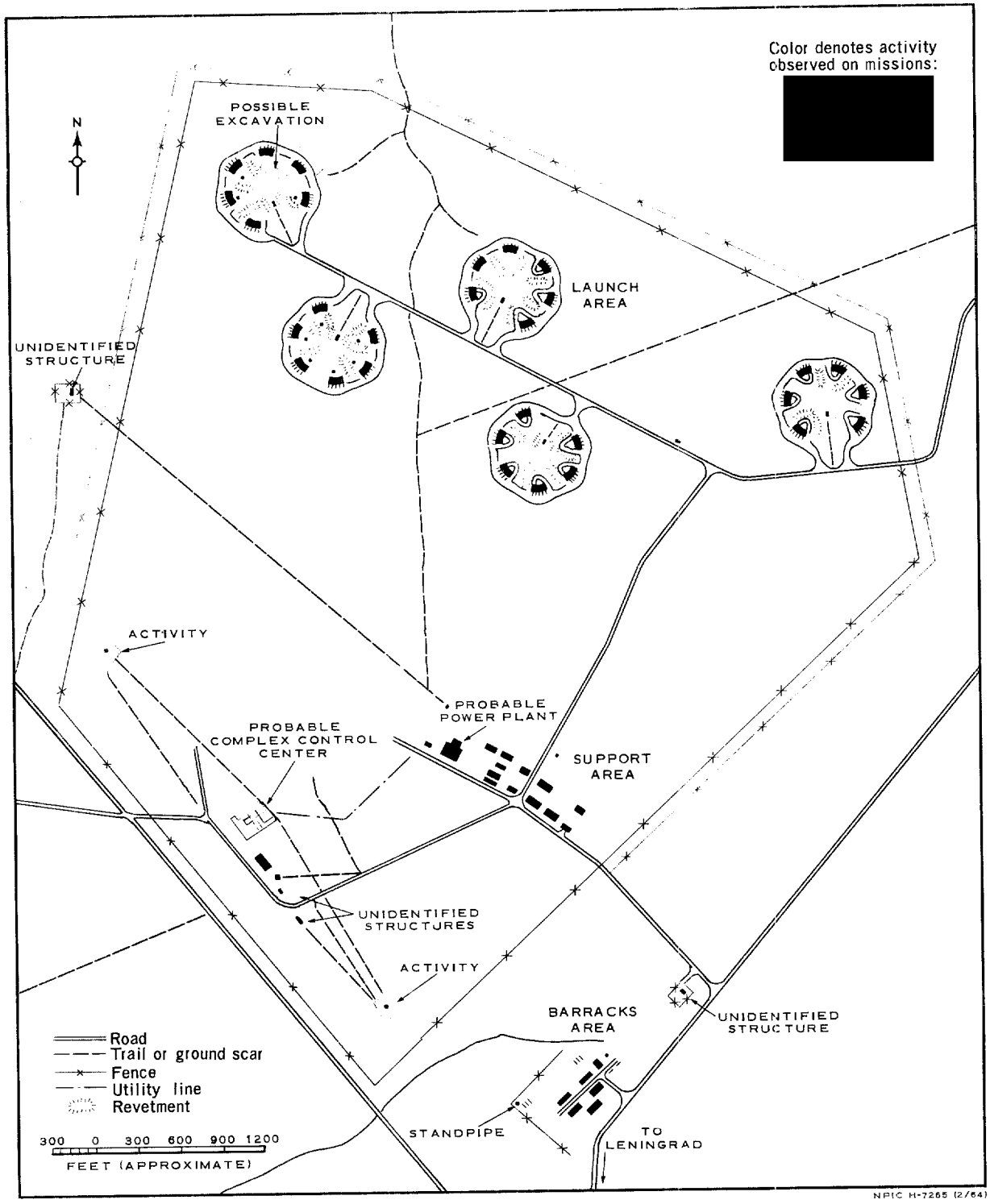

FIGURE 10. CONSTRUCTION CHRONOLOGY AS OBSERVED AT NORTHEAST PROBABLE AMM LAUNCH COMPLEX.

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Subsequent to [redacted] the next useful photographic coverage of the Northeast Complex was provided by [redacted] with snow conditions prevailing. Intervening missions of KEYHOLE photography of [redacted] covered the complex but interpretation was precluded by poor image quality of the [redacted] photography and atmospheric conditions on the other dates. The complex was cloud covered on additional photography of [redacted]

KEYHOLE photography of [redacted] provides the best quality coverage, to date, of the Northeast Complex.

Facilities within the secured operational area of the complex include a launch area, the Probable Complex Control Center (Figure 11), and a support area. A barracks area is located outside the complex security fencing to the south.

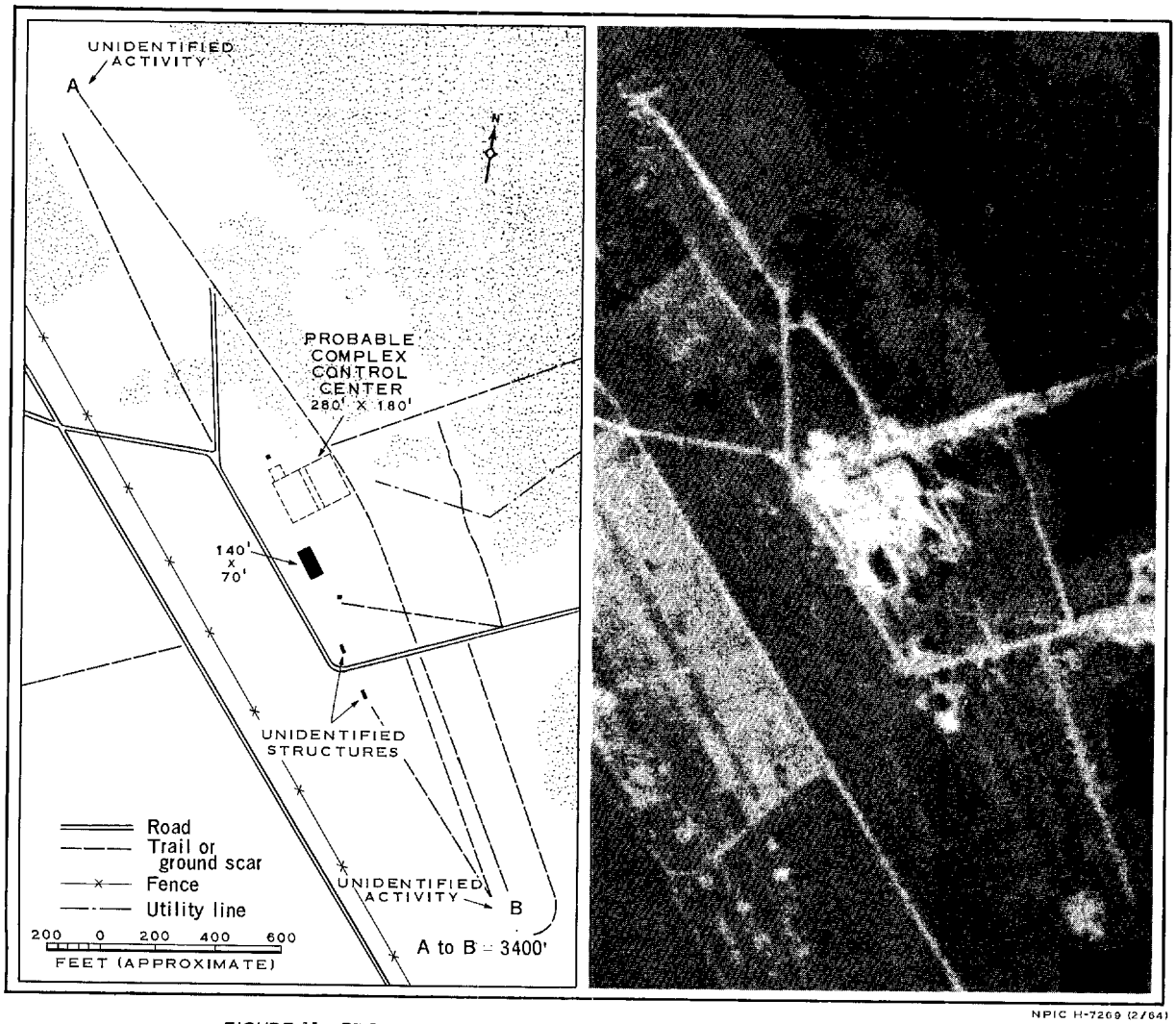

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FIGURE 11. PROBABLE COMPLEX CONTROL CENTER, NORTHEAST COMPLEX.

This complex appears to be in an earlier stage of construction than the Northwest and Southwest Complexes.

Eleven of the curved buildings at the launch sites were white in tone when observed on photography of [redacted] and all of them were dark in tone on photography of [redacted]

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Many of the individual launch positions appear incomplete at the Northeast Complex, as indicated by Figure 10. The construction status of areas adjacent to the inner side of the curved buildings is undetermined, with some appearing as possible excavations and others as objects or mounds of materials with some height. A linear pattern, possibly an excavation, extends between two of the positions at the northernmost launch site.

Electronic facilities comparable with those observed at the Northwest and Southwest Complexes were not present at the Northeast Complex when it was observed on KEYHOLE photography of [redacted] Activity was first noted on photography of [redacted] at the two positions that equate to the locations of electronic facilities at the other complexes. There were no visible signs of activity there in [redacted] The nature and status of this activity cannot be ascertained. There appear to be one or more small structures or earth mounds at each position.

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Construction status of the Probable Complex Control Center cannot be determined. Possible construction activity at this location was observed as early as [redacted] Extensive progress was noted on photography of [redacted] No significant change is discernible in the outward appearance of this center on photography of [redacted]

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The support area does not appear to have changed materially since [redacted]

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REFERENCES

PHOTOGRAPHY

25X1D

[redacted]

REFERENCES (Continued)

[redacted]

25X1D

MAPS OR CHARTS

ACIC. US Air Target Chart, Series 200, Sheet 0103-24HL, 3d ed, Jun 62, scale 1:200,000 (SECRET)

ACIC. US Air Target Chart, Series 200, Sheet 0103-25HL, 3d ed, Jun 62, scale 1:200,000 (SECRET)

ACIC. US Air Target Chart, Series 200, Sheet 0153-4HL, 3d ed, May 63, scale 1:200,000 (SECRET)

ACIC. US Air Target Chart, Series 200, Sheet 0153-5HL, 2d ed, Oct 59, scale 1:200,000 (SECRET)

DOCUMENTS

1. NPIC. R-135/62, Antimissile Missile Activity in the USSR, Oct 62 (TOP SECRET CHESS RUFF)
2. DIA. 9053-0151, Leningrad, Probable Radar at Complex A, USSR, May 63 (TOP SECRET RUFF)
3. NPIC. R-101/63, Possible Antimissile Missile Training Facility at the SAM Training Facility C-06, Leningrad, USSR, Jun 63 (TOP SECRET CHESS RUFF)

REQUIREMENTS

CIA. ORR/RR/76/63

CIA. ORR/C-RR3-80,338

CIA. OSI/C-SI3-80,324

CIA. OSI/R-134-63

USAF. AF-4-63

AFIC. AFCIN-3F2-62-33

NPIC PROJECT

J-80/63 (partial answer)